COMPOSITIONS FOR THE TREATMENT OF AFFECTIONS OF THE ORAL CAVITY AND UPPER RESPIRATORY TRACT

The present invention relates to compositions containing anthocyanosides and/or procyanidins in combination with floroglucinols for the treatment of the affections of the oral cavity and upper respiratory tract.

TECHNOLOGICAL BACKGROUND

Throat redness and inflammation, with formation of plaques, usually accompany common influenza, coryza and other cold diseases. Common cold and influenza, which on the average affect up to three times a year both children and adults, are related to mild viral infections caused by rhinovirus (40%), coronavirus (10%) and, to a less extent, adenovirus and parainfluenza viruses. Although no specific treatments exist for these pathologies, antihistamines and decongestants are considered useful, as the edema reduction alleviates pain and makes the course of the disease shorter.

DISCLOSURE OF THE INVENTION

The present invention relates to compositions containing:

a) anthocyanosides, and/or

b) procyanidins, and

c) floroglucinols,

useful for the treatment of the affections of the oral cavity and upper respiratory tract.

According to the present invention, the compositions contain 1 to 200 mg of anthocyanosides, and/or 1 to 200 mg of procyanidins, and 1 to 200 mg of floroglucinols.

According to the present invention, "anthocyanosides" includes both real anthocyanosides and anthocyanidins, their aglycones. The anthocyanosides preferably are derived from *Vaccinium myrtillus* extracts.

The extract of bilberry (*Vaccinium myrtillus*), as described in literature, has marked antiinflammatory activity, in particular topically, due to its action on capillary permeability and fragility. The preparation of bilberry extracts containing anthocyanosides is known to those skilled in the art. Bilberry anthocyanosides and procyanidins exert bacteriostatic action which prevents bacterial and fungal adhesion, for example at the dental and paradental level and on mucous membranes.

According to the present invention, the procyanidins can preferably be derived from *Vitis vinifera* extracts, obtained as disclosed in GB 1,541,469, or from *Camellia sinensis* extracts, as disclosed in EP 0 814 823, or from other plants, preferably edible, containing them.

Floroglucinols exert strong bacteriostatic action on a great number of bacteria and fungi strains. The minimum inhibitory concentration values of some floroglucinols on gram+ bacteria, gram- anaerobic bacteria and strains of *Candida albicans* range from 0.5 to 4 μg/ml.

According to the present invention, floroglucinols can be derived from *Hypericum* spp. extracts, preferably *Hypericum perforatum*, or from *Mirtus* spp. extracts, preferably *Mirtus communis*, or from *Humulus* spp. fractions, preferably *Humulus lupulus*, enriched in α and β acids. According to the invention, the fraction of β-acids prepared from *Humulus lupulus* contains 20 to 80%, preferably 60%, of floroglucinols expressed as colupulone; the fraction of α-acids contains 20 to 80%, preferably 60%, of humulone.

According to the present invention, among the *Hypericum* sp. extracts, particularly preferred is a *Hypericum perforatum* extract with a floroglucinols (adhyperforin/hyperforin) content ranging from 20 to 80%, preferably 60%.

According to the present invention, the *Mirtus communis* extract is prepared from the leaves, by extraction with carbon dioxide under conditions

of pressure ranging from 235 to 260 bars and temperatures ranging from 40 to 60°C, preferably 45°C. The resulting extract usually has a mirtocumolone content of 35%.

The compositions of the invention are capable of preventing the formation of purulent plaques deriving from various saprophytic infections of the oral cavity, thus avoiding the use of antibiotics, while reducing the progress of the infection. In particular, the compositions of the invention proved to exert a synergistic effect mainly as regards the duration of the disease.

Furthermore, the compositions of the invention exert favourable action on the cleanliness of the oral cavity and the removal of the dental plaque, thanks to the effect reducing bacterial adhesiveness, as already mentioned, exerted by bilberry extract and procyanidins, and to the high activity of floroglucinols on anaerobic bacterial strains.

The pharmaceutical compositions will be preferably presented in the form of tablets for the slow dissolution in the oral cavity or chewing gums which provide the slow release of the active principles. These compositions are used in preventive and prophylactic treatments as well as for the hygiene of the oral cavity.

According to a further preferred aspect, the compositions of the present invention will further contain essential oils, in particular mint oil.

According to a further preferred aspect, the compositions of the present invention will further contain a *Glycyrrhiza* extract, preferably having a content in glycyrrhizic acid of 10%.

The present invention, therefore, relates to compositions for the treatment of the affections of the oral cavity and upper respiratory tract, containing the combinations described above.

Said compositions will be prepared according to conventional methods

well known in pharmaceutical technique, as those described in "Remington's Pharmaceutical Handbook", Mack Publishing Co., N.Y., USA, together with suitable excipients commonly used in the art.

The present invention also relates to the use of a combination of anthocyanosides, and/or procyanidins, and floroglucinols, for the preparation of a medicament for the treatment of the affections of the oral cavity and upper respiratory tract.

The examples reported hereinbelow further illustrate the invention.

Example I - Tablets

Each 500 mg tablet contains:

Vaccinium myrtillus extract (25% in anthocyanidins)	60 mg
Humulus lupulus extract (60% in floroglucinols)	10 mg
Soy lecithin (30% phosphatidylcholine)	30 mg
Glycyrrhiza extract (10% of glycyrrhizic acid)	20 mg
Mint essential oil	10 mg
Saccharose	200 mg
Maltodextrin	150 mg
Acacia gum	15 mg
Magnesium stearate	5 mg

Example II - Tablets

Each 500 mg tablet contains:

Vitis vinifera extract (95% in procyanidins)	80 mg
Humulus lupulus extract (60% in floroglucinols)	10 mg
Soy lecithin (30% phosphatidylcholine)	30 mg

Glycyrrhiza extract	
(10% of glycyrrhizic acid)	20 mg
Mint essential oil	10 mg
Mannitol	320 mg
Povidone	20 mg
Silicium dioxide	5 mg
Magnesium stearate	5 mg

Example III - Tablets

Each 500 mg tablet contains:

Vitis vinifera extract (95% in procyanidins)	80 mg
Mirtus communis lipophilic extract	
(35% in mirtocupulone)	10 mg
Glycyrrhiza extract	
(10% of glycyrrhizic acid)	20 mg
Mint essential oil	10 mg
Maltodextrin	332 mg
Sodium saccharin	3 mg
Arabic gum	30 mg
Talc	10 mg
Magnesium stearate	5 mg

Example IV - Tablets

Each 500 mg tablet contains:

Vaccinium myrtillus extract	
(25% in anthocyanidins)	60 mg
Mirtus communis lipophilic extract	
(35% in mirtocupulone)	10 mg
Soy lecithin (30% phosphatidylcholine)	30 mg
Glycyrrhiza extract	

(10% of glycyrrhizic acid)	20 mg
Mint essential oil	10 mg
Saccharose	330 mg
Tragacanth gum	20 mg
Silicium dioxide	5 mg
Magnesium stearate	5 mg

Example V - Tablets

Each 500 mg tablet contains:

Camellia sinensis extract	
(70% in procyanidole oligomers)	80 mg
Humulus lupulus extract	
(60% in floroglucinols)	10 mg
Soy lecithin (30% phosphatidylcholine)	30 mg
Glycyrrhiza extract	
(10% of glycyrrhizic acid)	20 mg
Mint essential oil	10 mg
Mannitol	320 mg
Povidone	20 mg
Silicium dioxide	5 mg
Magnesium stearate	5 mg

Example VI - Tablets

Each 500 mg tablet contains:

Camellia sinensis extract	
(70% in procyanidole oligomers)	80 mg
Hypericum perforatum extract	
(60% in floroglucinols)	10 mg
Soy lecithin (30% phosphatidylcholine)	30 mg
Glycyrrhiza extract	

(10% of glycyrrhizic acid)	20 mg
Mint essential oil	10 mg
Mannitol	320 mg
Povidone	20 mg
Silicium dioxide	5 mg
Magnesium stearate	5 mg

Example VII - Chewing Gum

Each 2000 mg chewing gum contains:

Vitis vinifera extract (95% in procyanidins)	80 mg
Mirtus communis lipophilic extract (30% in mirtocupulone)	10 mg
Glycyrrhiza extract (10% of glycyrrhizic acid)	20 mg
Mint essential oil	10 mg
Gum base	1598 mg
Xylitol	250 mg
Aspartame	2 mg
Magnesium stearate	15 mg
Talc	15 mg